DOCKET NO. 96 - AN APPLICATION OF KILLINGLY ENERGY LIMITED PARTNERSHIP FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION OF A 32.2 MW (NET) WOOD BURNING ELECTRIC GENERATING FACILITY IN THE TOWN OF KILLINGLY, CONNECTICUT.

: Connecticut Siting
: Council
: May 8, 1989

O P I N I O N

The Killingly Energy Limited Partnership (KELP) applied to the Connecticut Siting Council (Council) for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction of a facility to generate electricity from the burning of wood chips in the Town of Killingly, Connecticut, on May 6, 1988. The proposed facility would generate 32.2 MW (net) of electricity which would be sold to the Connecticut Light and Power Company (CL&P), saving ratepayers a nominal $383 million (or $42 million present value) when based on a 25 year forecast price of oil. The project is attractive from an economic perspective based on this savings.

Consistent with CGS Section 16-243 b(a)(1)(B), the facility would be, at a minimum, 94.9 percent reliant on "renewable energy sources" with, at most, five percent annual heat input from the oil/gas on which such biomass generators rely for startup and flame stabilization, and unintended, non-wood impurities held to 0.1 percent or less. All fuels contain some impurities, and we do not believe that the legislature intended that qualifying renewable energy source generators would be excluded from using non-renewable fuels for startup, shutdown, and flame stabilization purposes. The Department of Public Utility Control (DPUC) has made a similar conclusion. Furthermore, the Council does not believe that the combustion of unintended non-wood materials would make the facility a hazardous waste management facility.

This plant addresses several needs identified clearly in state policy:

a) To balance public need and environmental stewardship, the Council must weigh the potential environmental effects of a proposed facility against the need for its construction and operation. This proposed facility is a Block One project as defined by the DPUC, and electricity from such small incremental additions will be necessary to prevent an energy deficit in the near future. The exact date of need is subject to uncertainties influenced by economic variables, unpredictable weather, changing commitments of supply from Canada, unreliability of foreign oil supply, and the State's heavy reliance on four large nuclear generators.

b) State policy supports development of indigenously-fueled, small, privately owned, and diversified electrical generating facilities which would increase the stability of the electrical supply system of the State. Reducing the State's reliance on oil-fueled electrical generation makes Connecticut less dependent on foreign energy supplies, less susceptible to fuel price increases, and less threatened by fuel shortages; it also reduces the risk of oil spills along the New England, New York, and New Jersey coasts. The timely incremental development of small power producers would also help meet the electric needs of the State in a timely and continual way, avoiding large deficits and expensive surpluses of capacity. In addition, the private ownership of this facility would isolate ratepayers from the expense of cost overruns, equipment failure, and premature closure. Solar and wind power generators have not been shown to be practical to realistically meet Connecticut's public need for electricity.

In its effort to protect the environment, public health, and safety, the Council held eight days of hearings and one evening hearing for the convenience of the public during which these and many other issues were raised, and some positive environmental impacts were identified. The Council has studied voluminous written and oral testimony regarding this proposed facility's potential effects on the air; water; roads; traffic; noise; natural environment; ecological balance; public health and safety; disposal; recycling and resource recovery; scenic, historic, and recreational values; forests and parks; and fish and wildlife, both in Connecticut and Rhode Island.

The applicant's air emissions modeling has shown that all wood can be safely burned, including demolition and recycled wood. However, to provide additional confidence in this analysis, the Council will order that a fuel screening, sampling, and wood ash testing program be developed to ensure the burning of clean wood chips and, also, the production of a high-quality ash suitable for recycling. Demolition wood should be limited to a maximum of 20 percent, by weight, of the fuel stream measured on an annual basis. Recycled wood, excluding demolition wood, should also be limited to a maximum of 20 percent, by weight, of the fuel stream measured on an annual basis. Additionally, both the bottom and fly ashes should be comprehensively evaluated for contaminants. Further, the bottom ash, if it is to be land spread, should be maintained separately in order to prevent its contamination by the potentially more toxic fly ash. No ash should be land spread unless this practice is approved in regulations promulgated by the DEP. The use of ash as a soil conditioner, as a composting agent, and for other beneficial uses would reduce the need for landfill space and benefit the region as a whole.

Another positive environmental impact would be realized, as the proposed facility would help dispose of waste wood that otherwise would be disposed of at Connecticut's already overburdened landfills. The plant would also capture energy and some polluting gases now dissipating into the environment at increasing rates as decaying wood material accumulates, unused. Additionally, the creation of a market for low quality wood would help to create healthier and more productive forests in Connecticut. The applicant has testified that a forest management wood chip procurement plan would be created, requiring loggers and chippers supplying chips from forest management activities to be registered by boards to be established under the new DEP regulations governing the voluntary registration of foresters and loggers. More productive forests would, in turn, remove greater amounts of air pollutants, including carbon dioxide, from the atmosphere.

Although the applicant has not located a cogenerator to use waste heat from the facility, they have testified to their willingness to do so and the Council will order that they solicit and remain receptive to an economically reasonable proposal.

The Council believes all of the relevant concerns could be addressed adequately. With respect to the proposed facility's effects from air emissions on the air and water quality of the Connecticut - Rhode Island region, recognizing that the high boiler temperatures proposed for the facility would reduce CO and HC emissions but increase NOx emissions, the Council believes a NOx reducing system is appropriate to keep NOx emissions as low as possible. Because of the variable moisture content of the fuel and resulting inconsistent condition of particulate emissions, a baghouse collection system might operate more consistently and be preferable to the electrostatic precipitator proposed for the facility. In addition, the potential emission of acid gases from unintended plastics and other non-wood materials in the waste stream might require the alteration of the fuel stream and might warrant use of an acid gas scrubbing device on the facility.

Although the facility would emit some greenhouse gases of concern, it would displace the use of some fossil fuel whose combustion is of equal or greater danger to the quality of our atmosphere and environment. Under any circumstance, the carbon contained in wood fuel would eventually be returned to the atmosphere in the form of CO2 or methane via natural decomposition processes.

The applicant has proposed a wet cooling tower system. This system would use an average of 276,000 gpd more water than a 50 percent wet/50 percent dry system and an average of 588,000 gpd more water than a 100 percent dry system.

While not exactly a bridge over troubled waters, this facility has generated a dispute over water. To be precise, we have concern over using Class "GA" water for industrial cooling. This issue may not be addressed by a DEP water diversion permit which may merely allocate water among current users. If there is sufficient water, now, for all, DEP may permit the diversion without imposing priorities. Yet, we believe it is unwise to dedicate a scarce resource such as Class "GA" water for industrial use. Even though there may be enough water now, there may not be enough in the future. And decisions made today may be difficult to change tomorrow; economic and political realities make water reallocation difficult, if not impossible. Therefore, we would prefer a dry cooling system. Put simply, water is more important to human life than electricity, but there is no statewide policy on this issue, and we are reluctant, as a siting agency with limited jurisdiction, to establish and apply non-site specific policy to those classes of business which must come before us. This is particularly the prerogative of the legislature whose policies would apply fairly to all potential users of water. Otherwise, applicants before us would be disadvantaged while other industrial water users would be favored. And, if we were to set water policies for applicants, we should not do it in a specific application. Policies, like regulations, should be adopted with notice and opportunity for public comment.

There is a relationship between water conservation, facility efficiency, and capital investment. Both alternatives to the proposed wet system would conserve water; however, they would increase the capital and operating costs of the facility and reduce the facility's overall efficiency. The reduction in efficiency of the facility would be twofold. First, additional fuel would have to be burned to maintain the proposed level of gross generation. Secondly, additional electricity would be required to operate the alternative cooling systems, which would reduce the amount of net generation.

Although the proposed level of net generation could be preserved by incrementally increasing the overall size of the project, there would be many environmental consequences, including increases in fuel wood deliveries (truck traffic), additional noise, ash generation, air emissions, and the size of the facility footprint in relation to the site. The magnitude of these impacts would vary, depending upon the selected level of net generation.

The Town of Killingly has zoned this site for industry. The site is adequately accessible and suitable for industrial use. The site is adjacent to an industrial park. Although controversial with respect to roads, traffic, noise, and other considerations, this facility is consistent with the local zone and surrounding land use. The applicant has testified that noise levels would be within DEP limits. The Council urges that the company develop communications with townspeople to help solve complaints in a constructive atmosphere.

The Council is concerned with potential impacts on wetland areas, removal of trees, leveling, grading, and possible erosion as a result of construction activities. The Council believes that a strict development and management (D&M) plan should confirm compliance with Council orders to minimize such impacts.

Based on the foregoing, the Council concludes that a Certificate of Environmental Compatibility and Public Need is warranted for the proposed facility, and hereby directs that such a Certificate be issued subject to the terms, limitations, and conditions of the Decision and Order that accompanies this Opinion.

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